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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/008,922  | 12/07/2001  | Jun F. Zheng         | 884.599US1          | 4775             |
| 21186   | 7590        | 12/31/2003           | EXAMINER            |                  |
| SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.<br>P.O. BOX 2938<br>MINNEAPOLIS, MN 55402 |             |                      | ULLAH, AKM E        |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2874                |                  |

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/008,922             | ZHENG, JUN F.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Akm Enayet Ullah       | 2874                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 30 day MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-35 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1- 15, drawn to a waveguide photodetector system, classified in class 385, subclass 12.
- II. Claims 16 - 22, drawn to a method of generating an output photocurrent from a guiding light, classified in class 250, subclass 227.
- III. Claims 23 - 25, drawn to a method of forming a waveguide photodetector, classified in class 257, subclass 76.
- IV. Claims 26 - 29, drawn to a method of processing an electrical signal, classified in class 370, subclass 4.
- V. Claims 30 - 32, drawn to an optoelectronic system, classified in class 385, subclass 14.
- VI. Claims 33 - 35, drawn to an optoelectronic clocking system, classified in class 372, subclass 38.

The inventions are distinct, each from the other because of the following reasons:

Inventions I, II, III, IV, V and VI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01).

In the instant case the different inventions the examples are as follows:

Group I and Group II: Group I, relates to a waveguide photodetector system along with a multiple mode interference (MMI) cavity with an input end & output end whereas Group II, invention recites to a method of generating an output photocurrent from a guided lightguide which includes a step where a connecting the N PIN detectors in parallel.

Group II and Group III has no relation since group II recites a method of a generating an output photocurrent from a guided lightguide by dispersing the guided lightwave into multiple (N) guided lightwave modes has nothing to with group III invention whereas group III recites a method of forming a waveguide photodetector having steps of forming semiconductor islands forming insulating regions

Group III and Group IV has no relation since group III recites a method of forming a waveguide photodetector having steps of forming semiconductor islands forming insulating regions whereas Group IV recites to a method of processing electrical signal having a conversion step where converting the electrical signal to a guided wave optical signal along with forming a demultiplexed electrical signal.

Group IV and Group V has no relation since group IV recites to a method of processing electrical signal having a conversion step where converting the electrical signal to a guided wave optical signal along with forming a demultiplexed electrical signal and group V recites an optoelectronic system including an input device optically coupled to the input waveguide that generates an optical signal and inputs the optical signal into the input waveguide.

Group V and Group VI are also two different invention since, group V recites an optoelectronic system including an input device optically coupled to the input waveguide that generates an optical signal and inputs the optical signal into the input waveguide and group VI recites an optoelectronic clocking system including a plurality of electronic edge tree comprising equal-length conductive branches, with each conductive branch coupled to one of the waveguide photodetectors to receive the photocurrent.

Group I and Group III since Group I, relates to a waveguide photodetector system along with a multiple mode interference (MMI) cavity with an input end & output end and group III recites a method of forming a waveguide photodetector having steps of forming semiconductor islands forming insulating regions.

Group I and Group IV since Group I, relates to a waveguide photodetector system along with a multiple mode interference (MMI) cavity with an input end & output end and group IV recites to a method of processing electrical signal having a conversion step where converting the electrical signal to a guided wave optical signal along with forming a demultiplexed electrical signal.

Group I and Group V has no relation since Group I, relates to a waveguide photodetector system along with a multiple mode interference (MMI) cavity with an input end & output end and group V recites an optoelectronic system including an input device optically coupled to the input waveguide that generates an optical signal and inputs the optical signal into the input waveguide.

Group I and Group VI has no relation since Group I, relates to a waveguide photodetector system along with a multiple mode interference (MMI) cavity with an input end & output end and group VI recites an optoelectronic clocking system including a plurality of electronic edge tree comprising equal-length conductive branches, with each conductive branch coupled to one of the waveguide photodetectors to receive the photocurrent.

The above-mentioned examples clearly state that each group recites a new invention and they are unrelated.

#### Conclusion To All Restriction Requirements

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II or III or IV or V or VI, restriction for examination purposes as indicated is proper.

A telephone call was made to Ann, Mccrackin on December 22, 2003 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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Applicants are given Thirty (30) days from the date of this letter to provide the election, as indicated above so as to avoid the question of abandonment.

#### Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akm Enayet Ullah whose telephone number is 703-308-4885. The examiner can normally be reached on Mon.- Wed. 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 703-3084819. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7721 for regular communications and 703-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Akm Enayet Ullah  
Primary Examiner  
Art Unit 2874

A.Ullah  
December 22, 2003